

COMMUNITY SUSTAINABILITY



CITY OF FLAGSTAFF ANNUAL REPORT ON SUSTAINABILITY: 2008



As part of the global community, the City of Flagstaff is taking actions to develop integrated and practical solutions to reduce community wide greenhouse gas emissions, conserve natural resources, reduce waste, and enhance our community's quality of life.

The City of Flagstaff has a long history of promoting sustainable practices and will continue to identify innovative strategies to encourage community participation and responsibility in building community sustainability.

For us, sustainability is living and managing activities in a manner that balances social, economic and environmental considerations to meet our needs and those of future generations. In practice, a sustainable Flagstaff is a place where the social well-being of current and future citizens is supported by a vibrant economy and a self-renewing healthy environment.



The 2008 Sustainability Annual Report highlights some of the City's recent sustainability efforts. The report outlines the significant actions taken by the City, recent achievements and next steps. The report is divided into the following elements: waste prevention, resource conservation, climate protection, and quality of life.

WASTE PREVENTION— Promotes the decrease of waste generation, improves material efficiency, and increases the reuse of products and materials in the waste stream.

RESOURCE CONSERVATION— Promotes the wise use of natural resources and decreasing consumption rates of the community's limited resources.

CLIMATE MANAGEMENT— Promotes effective and comprehensive solutions for addressing the climate issues.

QUALITY OF LIFE— Promotes community potential that enhances Flagstaff's standard of living.

The City of Flagstaff will continue to be a leader in this effort; however, community sustainability requires participation from the entire community. We need the public's help – to take action and make a difference. Together we can take steps that conserve energy, prevent waste and protect our natural resources. We invite you to join us in our efforts.

To learn more about sustainable living, practical solutions, and climate smart tips for home and work, visit the Sustainability Program website at www.flagstaff.az.gov/sustainable.

Sincerely,

Kevin Burke



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WASTE DIVERSION

WHAT IS IT?

Waste diversion is the process of using less materials. Waste diversion promotes reducing the amount of materials that you use or buy, while encouraging the reuse, recycling and composting of the materials.

WHY IS IT IMPORTANT?

By using fewer materials we can:

- reduce pollution
- conserve natural resources
- conserve space at the Cinder Lake Landfill
- be fiscally responsible

HOW DO WE MEASURE OUR PROGRESS?

The City of Flagstaff uses three measures to track its waste diversion efforts. Our recycling rates are a percentage of commercial and residential waste that is diverted specifically for recycling. We also track the total amount of waste that is diverted from our landfill for reuse or other purposes as a diversion rate. This measure is the percentage of the total waste stream diverted and includes recycled, reused and other use materials.

CITY'S BEST PRACTICES

The City provides battery, cell phone and toner cartridge recycling in City Hall for City staff and community members. City operations continue to transition to email correspondence and electronic recordkeeping,

billing and community documents instead of using paper-based communication and tracking systems. Various internal newsletters are distributed electronically. The City Library collects and uses recycled plastic bags for patrons to carry library books.

CITY'S RECENT ACHIEVEMENTS

The City of Flagstaff distributed 4,000 reusable shopping bags to the Flagstaff community. City employees were provided with reusable water bottles to discourage the use of disposable water bottles. Paperless billing was introduced by City utilities. Residents can now receive and pay their utility bill electronically.

HOW CAN YOU MAKE A DIFFERENCE?

- Avoid buying products with excess packaging.
- Bring a reusable bag with you to the grocery or retail store.
- Sell or donate goods instead of throwing them away.
- Consider buying used items instead of new.
- Always carry a reusable water bottle with you.
- Bring a travel cup with you the next time you get a cup of coffee or tea.

NEXT STEPS ➡

Address waste diversion through the implementation of a sustainable purchasing policy for City operations, a paper use efficiency program and paperless direct deposit online services available to customers.

RECYCLING

WHAT IS IT?

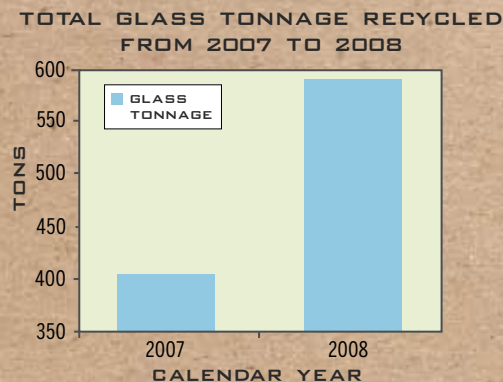
Recycling is the collection and reprocessing of waste materials into new products. The City of Flagstaff's recycling program processes paper products, cardboard, hard plastics, metal, aluminum and glass.

WHY IS IT IMPORTANT?

Recycling diverts useful resources from going to the landfill and reduces the consumption of raw materials and the energy used to process them. The diverted recyclables are processed into new products. In addition, recycling helps extend the life of the Cinder Lake Landfill by conserving space.

HOW DO WE MEASURE OUR PROGRESS?

Recycling is measured at the Material Recovery Facility and the Cinder Lake Landfill based on the materials collected from residential, commercial, and drop-off locations.



NEXT STEPS ➡

Expand curbside recycling service to include glass. Reduce recycling contamination rates through increased education and outreach efforts. Initiate Bag Central Station—Where Plastic Bags Belong Program to increase plastic bag recycling.

CITY'S BEST PRACTICES

All City facilities have established recycling programs. The City strives to utilize a minimum of 30% post consumer recycled multi-purpose paper. The City provides a residential curbside recycling program that has resulted in more than 70,000 tons of recyclables diverted from the landfill since 1998. In 2008, 9,000 tons of recyclables were collected.

CITY'S RECENT ACHIEVEMENTS

The City of Flagstaff Recycling Program added drop-off locations for glass recycling. As a result, the City has experienced a significant increase in glass recycling rates. The City's Recycling Program has also expanded its service and is now accepting hard plastics #1 through #7. In addition, the City of Flagstaff Conservation Program is a member of a partnership grant emphasizing recycling education.

HOW CAN YOU MAKE A DIFFERENCE?

- Purchase products made from recycled content that can be recycled or composted.
- Learn about items that can be recycled at www.flagstaff.az.gov/recycle.
- Recycle all materials accepted by the City recycling program.
- Set up a home composting or vermiculture system for food scraps and yard trimmings.

HAZARDOUS MATERIAL DISPOSAL

WHAT IS IT?

A hazardous material is any solid, liquid or gas that can harm people, other living organisms, property or the environment. A hazardous material may be flammable, explosive, toxic, corrosive, biohazardous, an oxidizer, an allergen or may have other characteristics that make it hazardous in specific circumstances.

WHY IS IT IMPORTANT?

According to the Environmental Protection Agency, hazardous waste is dangerous or potentially harmful when improperly handled. For more information on the Hazardous Products Center (HPC) visit: www.flagstaff.az.gov/hazwaste.

HOW DO WE MEASURE OUR PROGRESS?

The Hazardous Products Center provides City of Flagstaff, City of Sedona and Coconino County residents access to proper recycling and disposal of household hazardous waste. Disposal rates are closely tracked at the Hazardous Products Center.

CITY'S BEST PRACTICES

The Hazardous Products Center has a Drop and Swap area containing free reusable products. Five gallon buckets of free recycled exterior earth tone paints are available to the community.

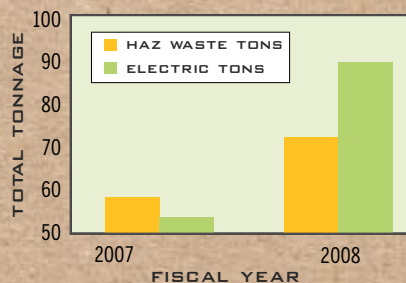
CITY'S RECENT ACHIEVEMENTS

The Small Business Waste Program opened its doors in April 2007. Currently, the program has more than 100 local businesses and has properly recycled or disposed of 36.5 tons of business waste in 2008.

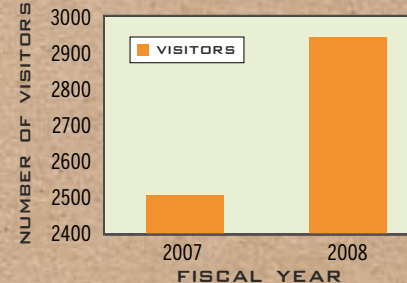
HOW CAN YOU MAKE A DIFFERENCE?

- Be conscious of the hazardous materials you purchase.
- Purchase only what you need and use what you buy!
- Bring spent, used and unused hazardous wastes and paints to the HPC for proper disposal.
- Don't put any of these items in trash cans or release them to the environment.
- Encourage family, friends, neighbors and businesses to utilize the HPC.

HAZARDOUS PRODUCTS CENTER (HPC)
FISCAL YEAR TOTAL TONNAGE



HAZARDOUS PRODUCTS CENTER (HPC)
FISCAL YEAR TOTAL VISITORS



NEXT STEPS ➡

Expand opportunities for increased hazardous material recycling and disposal.

WATER CONSERVATION

WHAT IS IT?

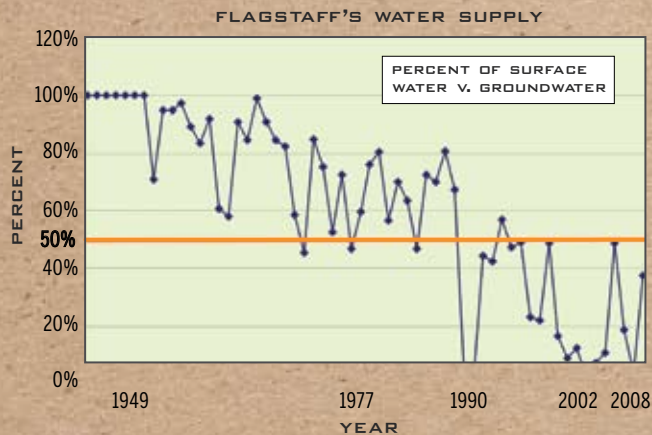
Water conservation is the efficient use of water resources.

WHY IS IT IMPORTANT?

Our supply of water is limited and our water demands continue to grow. Conservation efforts and lifelong water saving behaviors will help ensure that we will have enough water for ourselves and for future generations. Impacts from drought over the past two decades have dramatically altered the amount of surface water available. The chart below illustrates how important groundwater has become over the past twenty years.

HOW DO WE MEASURE OUR PROGRESS?

The City measures water consumption by tracking annual use and makes annual comparisons. The City also monitors water consumption per person per day. For example, on average, a Flagstaff resident uses 117 gallons per day which is the second lowest in the state and below the national average.



NEXT STEPS ➡

The Frances Short Pond will undergo a transformation in the next year as a social trail is added closer to the water's edge. Viewing benches, interpretative signage, and a pond aeration system will also be added.

CITY'S BEST PRACTICES

In 2008, the water conservation incentive program offered rebates to City of Flagstaff utility customers for qualifying efficient toilets, washers, hot water re-circulators and turf replacement. The Water Conservation Program manages Flagstaff watering regulations through the enforcement of the Drought Preparedness Plan. The City has a year round water schedule that restricts irrigation to select days based on addresses.

CITY'S RECENT ACHIEVEMENTS

The Milligan House Xeriscape Demonstration Garden is complete and open to the public for viewing. High efficiency toilets will be mandatory in July 2009 for all new construction.

HOW CAN YOU MAKE A DIFFERENCE?

- Use water wisely.
- Repair leaks immediately.
- Install a low flow showerhead.
- Install faucet aerators.
- Collect and use rainwater for watering your landscape.
- Replace thirsty lawns and landscape with water wise or native plants.
- Buy a high efficiency clothes washer and toilet.

RECLAIMED WATER

WHAT IS IT?

Reclaimed water is highly treated wastewater used for irrigating landscapes, golf courses, toilet flushing and other uses where potable quality water is not necessary.

WHY IS IT IMPORTANT?

Reclaimed water is an important component of the City's water conservation efforts. Reclaimed water not only reduces the use of potable water, but its use may also delay or slow down the need to construct new drinking water production infrastructure.

HOW DO WE MEASURE OUR PROGRESS?

Reclaimed water is measured through production at the Wildcat Hill Plant and the Rio de Flag Water Reclamation Plant. In addition, progress is measured by how much reclaimed water is used in a community relative to that community's over all water use.

CITY'S BEST PRACTICES

In 2008, 20% of the City's overall water use was reclaimed water. Approximately 694 million gallons of reclaimed water were used in 2008 for irrigation or amenity lake purposes. Additionally, the City discharged nearly 4,441 acre-feet (or 1.45 billion gallons) of reclaimed water into the Rio de Flag which is used for environmental purposes as well as recharging the groundwater aquifer.

CITY'S RECENT ACHIEVEMENTS

The City recently converted its Wildcat Waste Water Treatment facility to a Class A+ treatment process identical to Rio de Flag Water Reclamation Plant. This will permit much higher quality reclaimed water to be used and avoid running out during peak demand.

HOW CAN YOU MAKE A DIFFERENCE?

Check with the Utilities Department to see if reclaimed water is available in your neighborhood or at your place of business.

NEXT STEPS ➡

Increase reclaimed water processing and availability to the Flagstaff community.

ENERGY CONSERVATION

WHAT IS IT?

Energy conservation is decreasing the amount of energy used by promoting the wise use of energy.

WHY IS IT IMPORTANT?

Energy conservation is the most economical solution to reduce climate change, promote energy independence and increase economic vitality.

HOW DO WE MEASURE OUR PROGRESS?

The City measures monthly consumption of natural gas, electricity and water at all facilities.

CITY'S BEST PRACTICES

The City completed a three year energy conservation project that included upgrades to lighting systems, energy controls, heating, ventilation and air conditioning systems, water conservation measures and energy efficient motors. The result is a 42 % annual savings in natural gas, electric and water consumption.

CITY'S RECENT ACHIEVEMENTS

In 2008, the Flagstaff Sustainability Program distributed 250 residential energy efficiency kits to the Flagstaff community. In addition, more than 600 boxes of high efficiency holiday lights were purchased by the Flagstaff community in one week. Over 40,000 traditional incandescent lights were “swapped out” for the more efficient LED holiday lights. The estimated energy savings is more than 2,636 kilowatts of energy during every month of use.

HOW CAN YOU MAKE A DIFFERENCE?

- Energy conservation begins with using less energy—be conscious of your consumption.
- Learn about ENERGY STAR certified appliances at www.energystar.gov.
- Replace incandescent lights with more efficient compact fluorescent lights.
- Reduce phantom electricity by placing major electronics, such as stereo and video systems, on a surge protector that can be switched off.
- Conduct a home energy audit.
- Visit www.flagstaff.az.gov/sustainable.

NEXT STEPS ➡

Investigate further ways to reduce energy consumption and assist City staff and community members in reducing personal consumption at work and home. Expand Residential Energy Efficiency Program including the distribution of energy efficiency kits and LED holiday lights.

RENEWABLE ENERGY

WHAT IS IT?

Renewable energy is energy generated by sources that are constantly renewed or restored and include wind (wind power), water (hydropower), sun (solar), vegetation (biomass) and internal heat of the earth (geothermal).

WHY IS IT IMPORTANT?

Renewable energy reduces the use of energy produced by natural resources that cannot be replenished (fossil fuels such as oil, gas and coal).

HOW DO WE MEASURE OUR PROGRESS?

The City monitors its renewable energy production and its contribution to reducing the City's carbon footprint.

CITY'S BEST PRACTICES

The City is a member of the Northern Arizona Renewable Purchasing Group and in 2008 purchased 5% of its energy from renewable resources. City Hall is home to a 13 kilowatt solar system and the Cinder Lake Landfill hosts a 1.8 kilowatt wind generator system. Both systems assist in offsetting facility energy needs.

CITY'S RECENT ACHIEVEMENTS

The Wildcat Waste Water Treatment facility has installed a cogeneration system that will convert methane into energy for the facility. The system will significantly reduce greenhouse gas emissions associated with the facility.

The City's new Aquaplex facility incorporated a solar hot water heating system to provide all of the domestic hot water needs for the facility in addition to heating the pool. The estimated heating production is 235,638 kwh.

HOW CAN YOU MAKE A DIFFERENCE?

- Consider using renewable energy to offset your energy needs.
- Sign up for a renewable energy choice program with your energy provider.



The City of Flagstaff recently installed a cogeneration unit at the Wildcat Hill Wastewater Treatment Facility. The unit will combust the digester gas stream (which is high in methane content) to produce energy.

NEXT STEPS ➡

Identify opportunities and funding for additional small and large scale renewable energy projects. Install solar trash compactors in Historic Downtown Flagstaff.

SUSTAINABLE FLEET

WHAT IS IT?

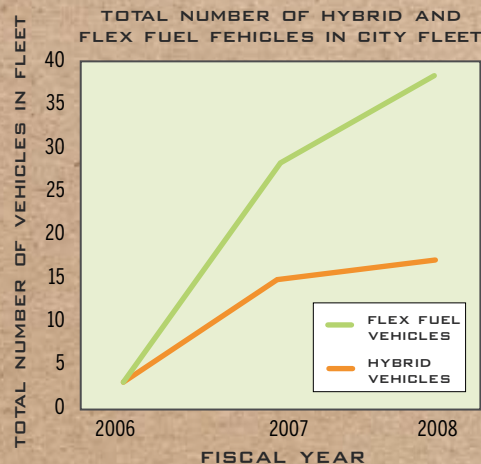
A sustainable fleet has the most fuel efficient and low emission vehicles that meet the City of Flagstaff's various needs.

WHY IS IT IMPORTANT?

A sustainable fleet assists the City in reducing its fuel consumption, vehicle emissions, and uses the City's resources responsibly.

HOW DO WE MEASURE OUR PROGRESS?

Progress is measured by the efficiency of the City's fleet, annual fuel consumption and the number of high efficiency and alternative vehicles.



NEXT STEPS ➡

Implement a Sustainable Fleet Policy that strives to reduce city wide fuel consumption, promote vehicle efficiency and smart driving. Increase the percentage of alternative and high efficiency vehicles in the City's fleet.

CITY'S BEST PRACTICES

Since 2003 the City has utilized a biodiesel blend in all diesel fleet, including collections and street maintenance vehicles. Fleet tires are retread up to three times, retreading tires produces 30% less greenhouse gas emissions than that required to produce a new tire and prevents waste. All discarded tires are recycled.

CITY'S RECENT ACHIEVEMENTS

In 2008 the City fleet included 17 hybrid electric, 21 flex fuel and three electric vehicles, which accounts for 8 percent of the City's fleet. In addition the City purchases ecoPASSes, annual bus passes, for all permanent employees through a partnership with Northern Arizona Intergovernmental Public Transportation Authority.

HOW CAN YOU MAKE A DIFFERENCE?

- Use alternative modes of transportation.
- Drive smart and efficiently, for tips visit www.flagstaff.az.gov/climate.
- Encourage your employer to purchase ecoPASSes for employees.
- Drive the most fuel efficient vehicle you can.



SUSTAINABLE BUILDING

WHAT IS IT?

Sustainable building practices increase building efficiency and reduce consumption of energy and natural resources, while reducing carbon emissions.

WHY IS IT IMPORTANT?

Sustainable buildings use key resources like energy, water, and materials more efficiently than buildings that are built to standard code. Building codes generally do not demand efficiencies that are found in sustainable practices.

HOW DO WE MEASURE OUR PROGRESS?

The City monitors the number of energy conservation permits.

CITY'S BEST PRACTICES

The Flagstaff City Council adopted the 2006 International Energy Conservation Code which will help improve the energy efficiency of all new constructions. Building codes are reviewed on an annual basis. The City is actively engaged in Coconino County's Sustainability Building Program for residential construction. The City co-sponsors a free green building lecture series specifically targeted to the building community.

CITY'S RECENT ACHIEVEMENTS

City Council passed a Sustainable Building Resolution in which all new City occupied facilities will be constructed to a minimum of LEED Silver Certification. The City is a main sponsor and organizer for the Northern Arizona Solar and Wind Energy Tour. The City also co-sponsors an annual sustainable home tour in partnership with Coconino County.

HOW CAN YOU MAKE A DIFFERENCE?

- Incorporate sustainable building practices into your next project.
- Use passive, active solar thermal heating principles.
- Reuse existing manufactured products or recycled products in new construction.
- Design structures which obtain 10-30% of their energy needs from renewable resources, such as solar and wind.

NEXT STEPS ➡

Introduce a voluntary sustainable design checklist. Update the Land Development Code to incorporate Smart Growth elements.

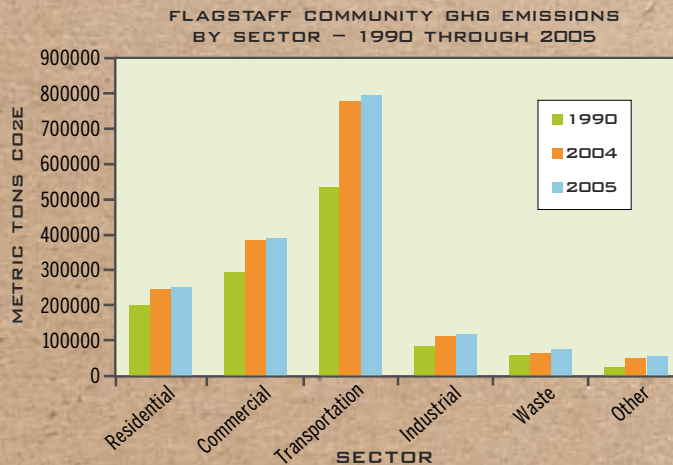
LOWER GREENHOUSE GAS EMISSIONS

WHAT ARE THEY?

Greenhouse gases (GHGs) are the gases present in the earth's atmosphere which warm near-surface global temperatures through the greenhouse effect. GHGs are essential to maintaining the temperature of the Earth; without them the planet would be too cold to inhabit. However, an excess of greenhouse gases can raise the temperature of a planet to lethal levels.

WHY IS IT IMPORTANT?

Many greenhouse gases occur naturally, but human activities are adding gases to the natural mix at an unparalleled rate. The City of Flagstaff is committed to reducing our greenhouse gas emissions with actions that make sense for our community, environment and economy.



HOW DO WE MEASURE OUR PROGRESS?

Progress will be monitored annually. Climate management efforts will be tracked and analyzed to measure their effectiveness.

CITY'S BEST PRACTICES

The City created the Sustainability Program to manage municipal and community wide climate management efforts.

CITY'S RECENT ACHIEVEMENTS

The City completed the Flagstaff greenhouse gas emissions inventory. The inventory will help guide efforts to reduce greenhouse gas emissions in the Flagstaff community. The City also distributed 5,000 compact fluorescent light bulbs to the Flagstaff community. The emission savings are equivalent to an annual 7,105 gallons of gasoline consumed. The bulbs will also save residents collectively more than \$48,000 in energy costs over the life of the bulbs.

HOW CAN YOU MAKE A DIFFERENCE?

- There is no single solution to the threat of climate change; success will depend on people taking small steps, every day, at home, at work, on the road and in their community.
- Calculate your carbon footprint.
- Visit www.flagstaff.az.gov/climate for more information on what you can do.

NEXT STEPS ➡

Develop and implement a climate management plan. Implement educational campaigns for the residential and business sectors. Provide community members with tools to reduce their energy consumption and reduce greenhouse gas emissions while saving money. Implement an internal climate management campaign.

LITTER PREVENTION

WHAT IS IT?

The City's Environmental Code Enforcement Program enforces codes and educates the public on maintaining a safe and healthy environment for the Flagstaff community. Through a wide variety of litter prevention programs, the Program strives to Keep Flagstaff Beautiful.

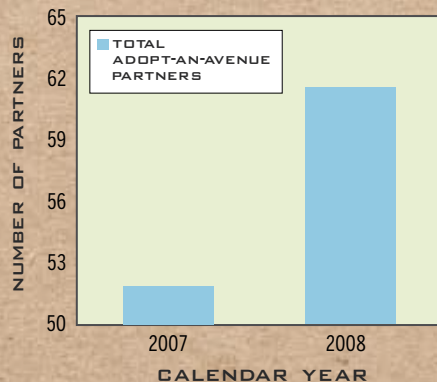
WHY IS IT IMPORTANT?

Accumulated litter is not only a health and safety issue but also poorly impacts the appearance of our community. People who have the strongest community bonds feel the highest obligation not to litter.

HOW DO WE MEASURE OUR PROGRESS?

Progress is measured in a number of ways including tracking litter related complaints, volunteer litter clean-ups and participation in the Adopt-an-Avenue and Community Clean up Program.

2008 TOTAL ADOPT-AN-AVENUE PARTNERS



CITY'S BEST PRACTICES

The City offers opportunities to get involved. The Adopt-an-Avenue and Community Clean up Program gives local groups around Flagstaff an opportunity to help Keep Flagstaff Beautiful. There are currently over sixty Adopt-an-Avenue partners. In addition, City staff provides litter prevention education to local schools and community associations. City staff works with residents and businesses to clean up accumulation of litter on private property.

CITY'S RECENT ACHIEVEMENTS

The City of Flagstaff recently sponsored the first annual Flagstaff Fifteen Minute Makeover. This event was a great success. Over 4,200 community members participated in the community wide makeover on October 15, 2008. Many communities throughout the state are using this model to implement similar events. In 2008, the Environmental Code Enforcement Program sponsored an estimated 71 clean ups generating 2,432 bags of litter.

HOW CAN YOU MAKE A DIFFERENCE?

- Ask people to pick up their litter.
- Volunteer to pick up litter.
- Be sure your trash is well-secured in appropriate containers.
- Use reusable shopping bags.
- Get involved!

NEXT STEPS ➡

City of Flagstaff Environmental Code Enforcement Program will continue to address the need for litter prevention in our community through code enforcement, litter prevention education and support for community litter clean ups.

RECREATION DIVISION

WHAT IS IT?

The Recreation Division provides for health, inspiration and recreation opportunities to the Flagstaff community. The creation and maintenance of comprehensive programs, facilities and special events are designed to meet the physical, mental, cultural, and social needs of residents and visitors alike.

WHY IS IT IMPORTANT?

Recreation is an investment in the future well-being of our community members.

HOW DO WE MEASURE OUR PROGRESS?

Progress is measured through enrollment statistics, participant surveys and direct feedback.

CITY'S BEST PRACTICES

The City Recreation Division offers programming in a wide variety of areas including: aquatics, athletics, community special events, therapeutic recreation, outdoor education, senior citizen and teen targeted programs, pre-school, fine arts and dance camps and classes. Scholarships and reduced user fees are available to individuals and families that are experiencing financial hardship.

CITY'S RECENT ACHIEVEMENTS

The City has completed large scale improvement projects to the City's recreational facility inventory including the Thorpe Park Community and Senior Center renovation. In 2008 the Flagstaff Aquaplex opened to community members.

HOW CAN YOU MAKE A DIFFERENCE?

- Be active and healthy.
- Spend more time with friends and family.
- Try out a City recreation program.
- For more information, visit: www.flagstaff.az.gov.



The Aquaplex has a 63 solar panel system that includes 3 rows, 9 banks of 7 collectors each. The system saves energy as it is used to entirely heat all the pool water.

NEXT STEPS ➡

Expansion of swimming pools at the Aquaplex.



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